cummins
civil engineering

Greenhouse Gas Emissions Report 2024

April 2025
v1.0

Report Information

Company Name	Cummins Civil Engineering Ltd	
Company address	Sunnycroft, Stocks Lane, Over Peover, WA16 8TZ	
Reporting period	01.01.2024 – 31.12.2024	
Report conducted by	George Greaves	
Methodology	The calculations in this report conform to the Greenhouse Gas Protocol Corporate Standard. Scope 1 and 2 emissions are calculated from activity-based data. Scope 3 emissions are calculated from a mix of activity- and spend-based data.	
Carbon emissions	Total (tonnes CO2e)	1,757.6 tonnes CO2e
	Total per revenue	0.206 kg CO2e / £
	Scope 1	451.0 tonnes CO2e
	Scope 2	3.6 tonnes CO2e
	Scope 3	1,303.1 tonnes CO2e

Executive Summary

Cummins Civil Engineering Ltd is a civil engineering and groundworks contractor that specialises in deep excavation and drainage. It is based in Over Peover, Cheshire, and works on projects across the UK. Cummins' carbon emissions were higher in 2024 compared with the previous year. This was in line with a greatly increased trading volume in what was a very successful year for the business.

Once again, Cummins has maintained its excellent carbon emissions tracking processes, resulting in ~70% of captured emissions being measured using activity-based data, with the rest measured by spend-based methods. This has helped it once again to build an accurate picture of its carbon emissions and to produce meaningful reduction strategies.

This year saw Cummins work on multiple long-running construction projects, with gas repairs forming a smaller proportion of its work compared to previous years. These construction projects use lots of raw materials, and this has resulted in raw materials being the largest contributor to emissions, with concrete forming the bulk of this.

Mobile combustion remained a large contributor, though the balance was shifted towards site fuel rather than vehicle fuel. This was due to more site machinery being employed on jobs, and lower mileage travelling to and from sites, with much of the workforce staying close to sites during the week.

A significant contributor to emissions this year was the capital investment in new vans. This is following a year in which no vans were purchased, which contributes to the higher emissions intensity this year.

Compared with the previous year, Cummins reduced the journey distances of materials being delivered to and taken from sites. This helped it to reduce the emissions intensity of transport and distribution. This was a major operational improvement compared with the previous year and should become the norm moving forward.

In light of the analysis performed this year, new strategic goals have been identified. These have been combined with the goals identified in last year's report. Note that last year's report was produced in November 2024, so there was no opportunity for Cummins to act on these goals and have a significant impact on 2024 emissions.

The strategic goals for the coming year have been grouped into categories of *Fuelling our work*, *Sustainable and circular materials*, and *Moving things around*, as these represent what are consistently the largest contributors to emissions:

Fuelling our work

- Source Hydrotreated Vegetable Oil (HVO) fuel for use on site to reduce site fuel emissions by up to 90%.
- Van-share wherever possible when travelling to and from site to reduce fuel consumption.

Sustainable and circular materials

- Source sustainable concrete such as EcoPact for construction projects where job specifications allow.
- Replace remaining primary-sourced raw materials such as MOT type 1 with recycled versions.

Moving things around

- Continue to use aggregates yards local to project sites for sourcing and disposing of materials.
- Replace remaining ultra-long (>100 miles) journeys transporting machinery with shorter ones.

This report begins with an overview of the data supplied by Cummins and the methodology used to calculate its carbon emissions. The two subsequent sections provide analysis of the year-on-year changes in emissions and the emissions of different elements of the business. Finally, emissions reduction strategies are put forward based on the analysis presented beforehand.

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Methodology

Greenhouse Gas Protocol Corporate Standard

Greenhouse Gas (GHG) Protocol Corporate Standard methodology has been used to calculate and report carbon emissions. Business activity data has been used where available to produce an accurate measurement of carbon emissions. Where activity data was not available, spend-based calculations have been performed and aggregated with activity-based calculations. The percentage of emissions captured by activity-based data is ~70%, which is a remarkable achievement for a small-to-medium-size business, especially one with such a large volume of transactions for goods and services.

Emissions are categorised into scope 1, 2 and 3 emissions. Briefly, scope 1 emissions include direct emissions from sources owned or controlled by the company (e.g. emissions from combustion of fuel in company owned vehicles and machinery). Scope 2 accounts for the indirect emissions from purchased electricity, including that used in offices, on site, and by electric vehicles. Scope 3 accounts for all other indirect emissions that arise from consequences of the company's actions, but not from sources owned or controlled by them. This includes, but is not limited to: the materials purchased by the company; the waste it produces; the distribution networks it relies on; and any business travel. Scope 3 emissions also include well-to-tank and transport and distribution emissions associated with fuel and electricity use (i.e. fuel and electricity emissions not included in scope 1 or 2). Further details on calculations and categorisation can be found in GHG Protocol Corporate Standard documentation.

Data supplied

Civil engineering contractors tend to have a large proportion of their emissions arising from fuel used by vehicles and site machinery, the raw materials used on site, and the distribution and transportation of machinery and raw materials. To ensure accurate emissions calculations, Cummins has supplied activity data for:

- Fuel used in company-owned vans, site machinery and generators
- Electricity used in offices
- Raw materials used (aggregates, concrete, soil and other construction materials)
- Waste materials and disposal methods
- Haulage of machinery and materials to and from site, including journey length, weight of goods, and transport method.
- Business travel and overnight stays.

This year, a significant contribution to Cummins' carbon emissions arose from the purchase of new vans for its fleet. The emissions associated with this capital investment were accounted for with a spend-based calculation.

Year-on-year changes in emissions

Figure 1 shows Cummins' carbon dioxide equivalent (CO2e) emissions for 2021–2024. Scope 3 emissions consistently constitute the largest portion of total emissions at Cummins. This is due to a large quantity of raw materials, many of which are emissions intensive, such as concrete, as well as the haulage of materials and machinery. Note that scope 2 emissions are too small to be seen in the figure.

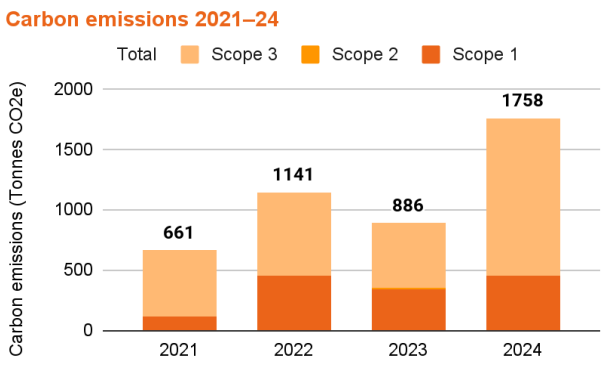

Fig 1. Breakdown of carbon dioxide equivalent (CO2e) emissions by scope point for 2021, 2022, 2023 and 2024. Note that scope 2 emissions are too small to see here.

2024 saw a large increase in carbon emissions compared to 2023. This comprised a small increase in scope 1 emissions, due to increased mobile combustion, and a much larger increase in scope 3 emissions. The constituent scope 3 emissions are analysed later in this report.

The increase in emissions in 2024 can largely be explained by an increase volume of trading for Cummins in what was a very successful year. Figure 2 shows carbon dioxide equivalent emissions normalised to calendar year revenue, i.e. emissions intensity. Emissions intensity is more consistent across the four years, suggesting that indeed much of the disparity in total emissions can be explained by different trading volumes.

YoY emissions are closely tied to trading volumes. Revenue-normalised emissions provide an indication of emissions performance, and should continue to be monitored.

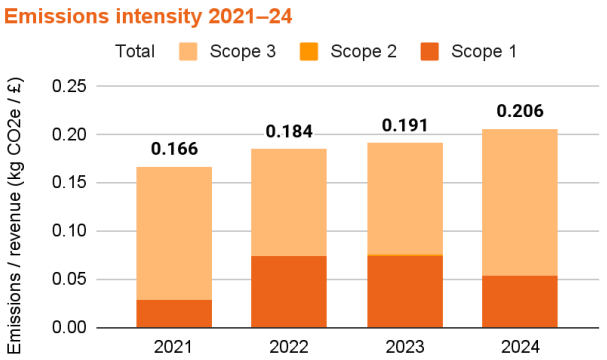

Fig 2. Emissions intensity (carbon dioxide equivalent emissions normalised to calendar year revenue) by scope point for 2021, 2022, 2023 and 2024. Note that scope 2 emissions are too small to see here.

The increase in emissions intensity from 2021 to 2024 indicates a worsening emissions performance, however there are factors to mitigate this. The increase from 2021–2023 can be partially explained by Cummins providing a higher proportion of business activity data (versus spend data) for emissions calculations each year, which better captures emissions. The increase in the last year can be explained by Cummins adding new vans to its fleet, after having not done so in 2023.

Changes to emissions intensity in each emissions category are analysed in the following pages. This indicates operational improvements and deteriorations to emissions performance.

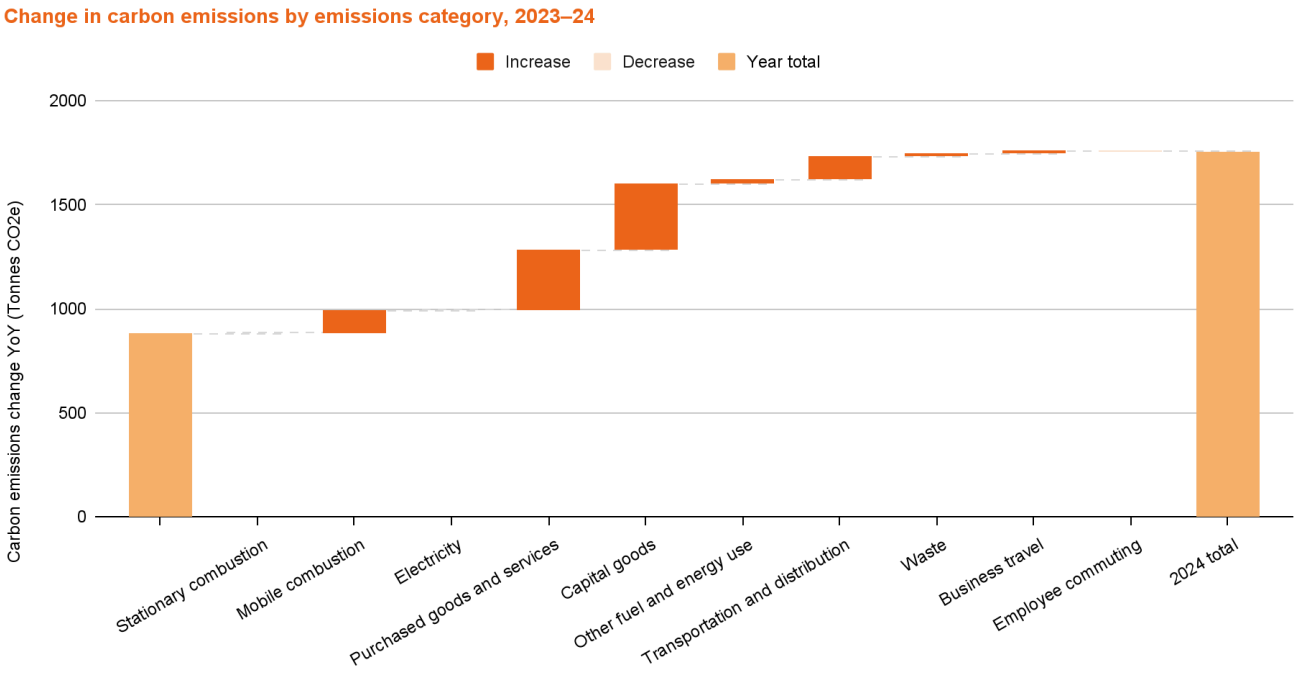

Fig 3. Change in carbon emissions between 2023 and 2024 by emissions category.

Figure 3 shows the changes in emissions between 2023 and 2024 for each emissions category. Mobile combustion, purchased goods and services, capital goods and transportation and distribution all increased significantly. This is not surprising, however, given the larger trading volume in 2024.

In order to separate out the effects of a larger trading volume from the effects of operational changes, the changes in emissions intensity for each category have been calculated. These are shown in figure 4.

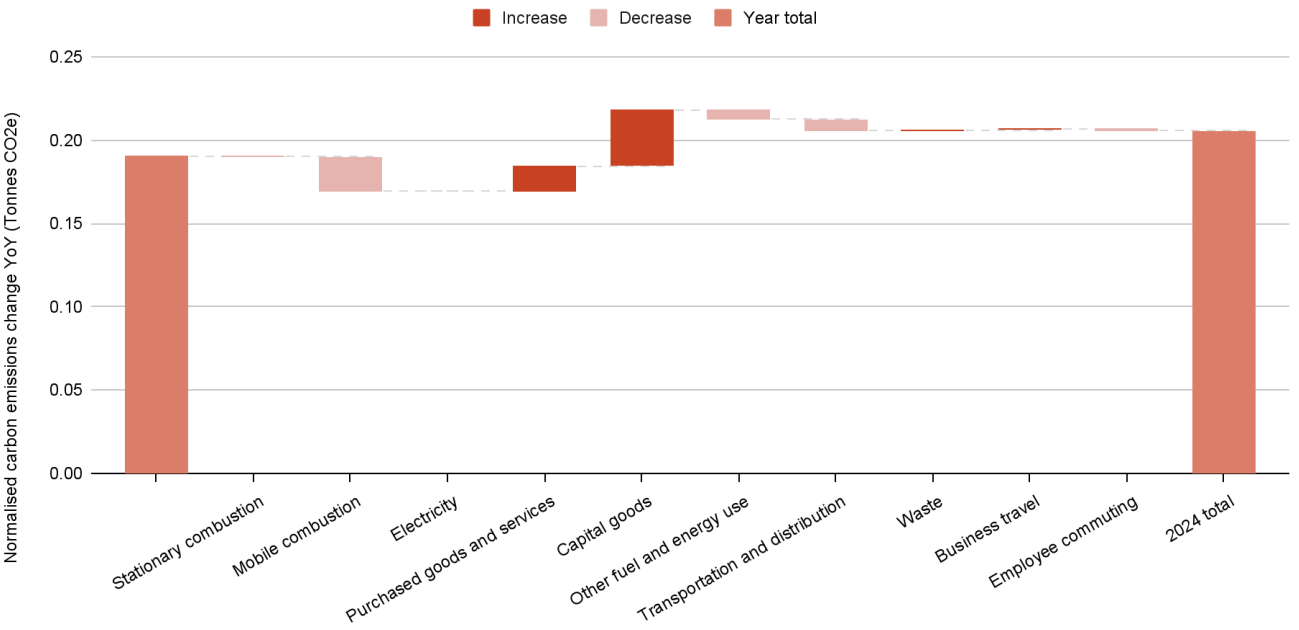

Fig 4. Change in emissions intensity (carbon dioxide equivalent emissions normalised to revenue) between 2023 and 2024 by emissions category.

The emissions intensity of mobile combustion reduced in 2024, which indicates that Cummins used fuel more efficiently. This could be due to a variety of factors, including: 1) using newer, more efficient vehicles, and 2) some long-running jobs relying on employees staying close to sites during the week, reducing travel.

The emissions intensity of purchased goods and services increased year on year. This is a result of Cummins' work this year comprising fewer gas pipeline repairs, which use fewer materials, and more construction projects, which are very raw material intensive.

The largest change in emissions intensity, and indeed actual emissions, was the increase in the capital goods category. This represents the addition of vans to the Cummins fleet in 2024, which was the first addition since 2022, and is the reason why the 2024 emissions intensity is higher than that of 2023.

A decrease in emissions intensity was observed in the transportation and distribution category. This is a result of operational improvements which mean that machines and materials are sourced closer to job sites, muck from sites is transported to nearby tips, and there are fewer ultra long (>100 miles) journeys for delivering machinery. A small reduction in emissions intensity was observed in the 'other fuel and energy use' category. This is in line with the reduction in mobile combustion.

Contributions by category

The contributions to total emissions are summarised in the table below.

	Category	Emissions (kg CO2e)
Scope 1		
	Stationary combustion	5,080
	Mobile combustion	445,900
Scope 2		
	Electricity	3,551
Scope 3		
	Purchased Goods and Services	484,766
	Capital Goods	345,000
	Other fuel and energy use (Fuel- and Energy-Related Activities not included in Scope 1 or Scope 2)	106,695
	(Upstream) Transportation and Distribution	314,493
	Waste (Generated in Operations)	25,225
	Business Travel	25,602
	Employee Commuting	1,278
Total		**1,757,590**

The largest contributors to carbon emissions in 2024 are shown in figure 5. The largest contributor is purchased goods and services which, as discussed, is high in 2024 due to an increased proportion of construction projects versus excavations for gas repairs.

The emissions of different material types are shown in figure 6. Concrete is by far the largest contributor to emissions, as is well known in the construction industry. It therefore represents a huge opportunity for Cummins to reduce its emissions. Cummins should make it a priority to source more sustainable concrete, such as biochar-concrete blends, or products such as Ecopact.

Concrete is one of the largest contributors to emissions. Sourcing sustainable concrete, such as EcoPact, is therefore a primary target for making reductions.

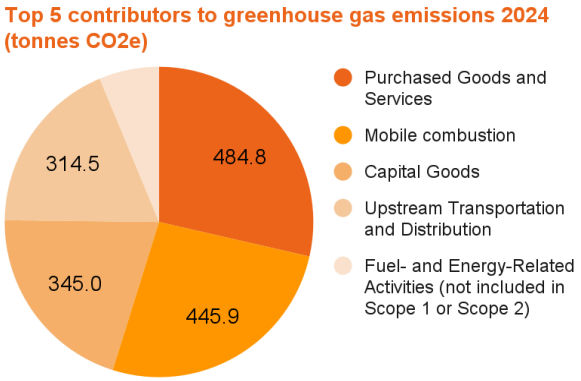

Fig 5. The top five contributing categories to carbon emissions in 2024.

MOT Type 1, an aggregate product used as a sub-base, remains a large contributor to raw material emissions. Cummins should aim to source recycled MOT type 1 as a standard on projects.

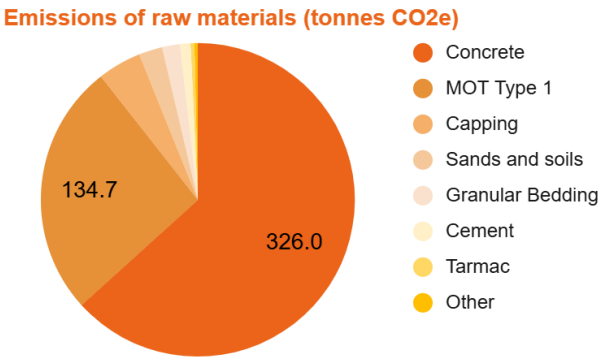

Fig 6. Emissions arising from the purchase of raw materials.

The second-largest contributor to emissions is mobile combustion, having been the largest contributor in 2023. This therefore remains an area in which efforts to reduce emissions can be extremely impactful.

Interestingly, 2024 saw a higher proportion of site fuel emissions compared to vehicle fuel emissions. This is understandable considering Cummins worked on a higher proportion of long-running construction jobs compared with gas pipeline repairs: with the former, there are fewer journeys to and from site made in vans, and there is also more machinery used on site.

The large amount of site fuel used presents a huge opportunity for switching to HVO fuel.

Fortunately, site fuel is more easily replaced with sustainable fuels such as hydrotreated vegetable oil (HVO) than vehicle fuel is, since it is available for bulk order but is not available at pumps. This therefore presents a huge opportunity for reducing mobile combustion emissions, and Cummins should make this a priority.

The third-largest contributor to emissions is the purchase of capital goods. This is due to a significant increase to the fleet of vehicles this year. Cummins should aim to get as long a life as possible from these vehicles to maximise the utility received and reduce the emissions falling under this category in future years.

The fourth-largest contributor to emissions is transportation and distribution. This comprises the transportation of materials and machinery to and from sites. As discussed, improvements to operations have reduced the emissions intensity of transportation and distribution. These improvements can be seen in figure 7, which shows the distribution of journey lengths in 2023 and 2024.

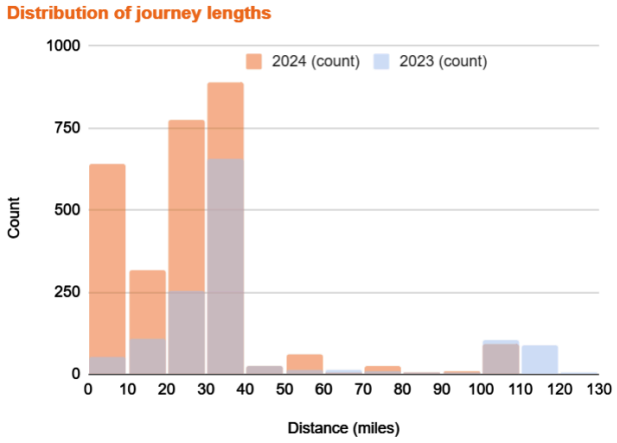

Fig 7. Distribution of journey lengths contributing to upstream transportation and distribution emissions for 2023 and 2024.

Figure 7 shows that, in stark contrast to 2023, a large proportion of journeys in 2024 were under ten miles in length. This was achieved by Cummins establishing relationships with aggregates and plant yards and tips in close-proximity to long-running job sites. 2024 also saw fewer ultra long (>100 miles) journeys compared to 2023. Both of these factors helped to reduce the emissions intensity of transportation and distribution. This is a significant area of operational improvement for Cummins that was identified as a key strategic goal in 2023.

Figure 7 shows that, once again, there is a high frequency of journeys in the 30–40 miles range. This represents the route between a project site in Oldham and the aggregates yard of Cummins' sister company UK Aggregates and Plant. There are clear operational efficiencies of using a sister company for transportation and distribution, but from an emissions point of view, it would be beneficial to source and tip materials more locally to project sites where possible.

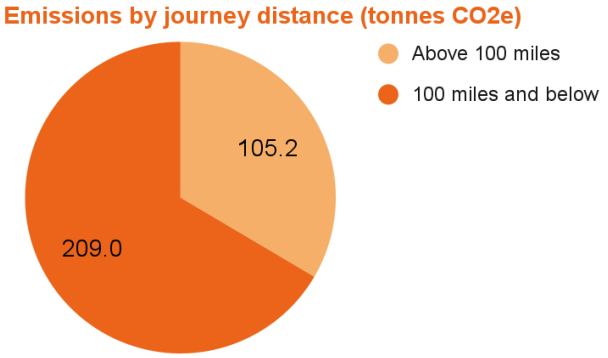

Fig 8. Total emissions of journeys above 100 miles versus 100 miles and below.

Whilst Cummins has reduced the number of ultra-long transport and distribution journeys, figure 8 shows that they still represent approximately one third of transportation and distribution emissions. These longer routes should continue to be reevaluated, and should be replaced with shorter routes where possible.

Emissions intensity of transportation & distribution has reduced due to establishing relationships with local suppliers.

Emissions reduction strategy

Fuelling our work

Switch site fuel to hydrotreated vegetable oil (HVO). HVO fuel can reduce emissions by up to 90% compared to diesel, costs only marginally more, and can be used as a direct substitute. Cummins should order in bulk to job sites to reduce the emissions of combustion on site.

Van-share where possible. Vehicle emissions remain as one of the largest sources of emissions for Cummins. Its workforce should travel to and from sites together in order to reduce fuel use.

Sustainable and circular materials

Source sustainable concrete. Purchase of raw materials is the largest contributor to emissions this year and concrete constituted nearly two-thirds of that. Sustainable concrete should be sourced to massively reduce Cummins' emissions.

Switch primary-sourced MOT type 1 to a recycled source. Behind concrete, MOT type 1 is the second largest contributor to raw material emissions. Switching to a recycled source for use as standard would help to reduce emissions.

Moving things around

Continue to use local aggregates yards for materials and tipping. Cummins saw a reduced emissions intensity of transportation and distribution this year thanks to using local tips and aggregates yards on long-running jobs. This should become the norm for all jobs moving forward, regardless of length and location.

Reduce the number of ultra-long transportation and distribution routes. These routes aren't as frequent as shorter routes, but are very emissions intense, so have a large impact on overall carbon emissions, and present a huge opportunity for reducing emissions.

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